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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,333	10/07/2005	Soo-Sang Yoon	2017-32	1868
<div>52706      7590      04/19/2007</div> <div>IPLA P.A. 3580 WILSHIRE BLVD. 17TH FLOOR LOS ANGELES, CA 90010</div>				
			EXAMINER KIM, SU C	
			ART UNIT 2823	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/552,333

Applicant(s)

YOON, SOO-SANG

Examiner

Su C. Kim

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 99333 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. I. e. wafer dicing with alternating sawing pattern and method for manufacturing semiconductor wafer dicing with alternating sawing pattern.

### ***Claim Objections***

2. Claims 4 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 3. See MPEP § 608.01(n). Accordingly, the claim 4 has not been further treated on the merits.

### ***Drawings***

3. Figures 1a-1d should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are:

In claim 5, lines 5-6, it is confusing to recite "performing a first precise sawing process along a horizontal line (L1) for die design on the wafer (100)" and "taking a way alternately - - ninth strips" because by cutting a horizontal line once, the plurality of strips can not be produced as applicant's claim such as second, third, fourth, ..etc.

It appears that - - a horizontal line - - should replace "a plurality of horizontal lines" in claim 5, line 5. ***For the purposes of this office action the claims have been interpreted as containing this amendment.***

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

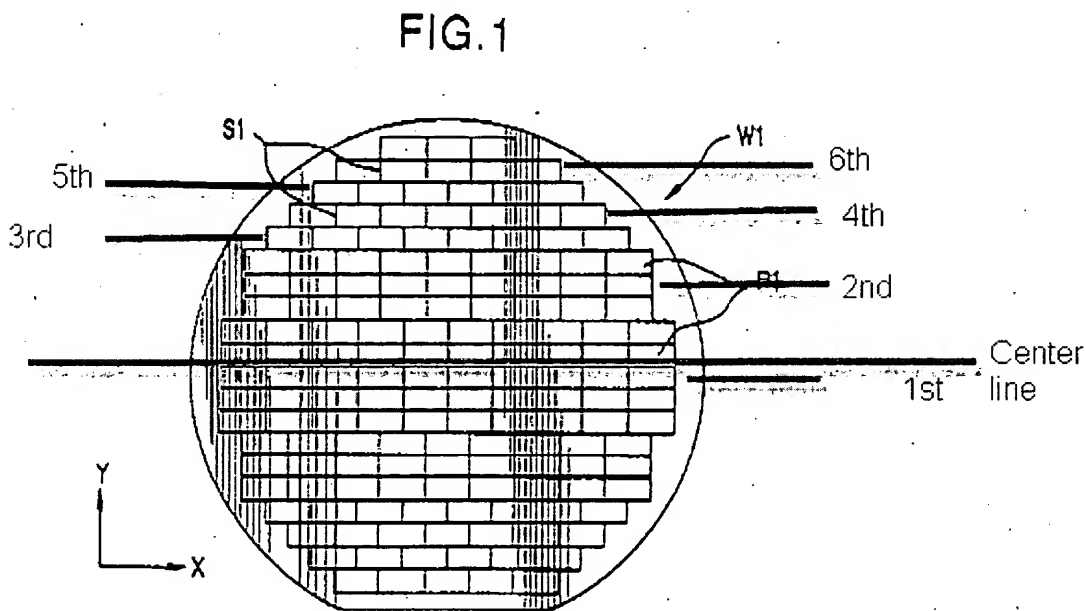
7. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Arai (US 6528864).

Regarding claim 1, Arai discloses a wafer, wherein a plurality of strips (Fig. 1) having a die arrangement structure in which dies are degned to have an equal width P1

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(Fig. 1) are alternately arranged from the center (Fig. 1, note: some of strips are arranged alternately from the center).

Regarding claim 2, as applied to claim 1, Arai discloses first strips (see Fig. 1 below) positioned closest to the center of the wafer adjoin each other to be symmetric with each other, and other strips arranged sequentially on the outside of the first strips are alternately staggered.



### ***Allowable Subject Matter***

8. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, as applied to claim 1 or 2, Arai discloses the strips comprises:

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first strips which have a die arrangement structure in which their dies are designed to have an equal width (Fig. 1 above, note: the 1<sup>st</sup> strips);

second strips which adjoin the first strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are staggered with the respective dies of the first strips (Fig. 1 above, note: the 2<sup>nd</sup> strips);

third strips that adjoin the second strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the first strips but staggered with those of the second strips (Fig. 1 above, note: the 3<sup>rd</sup> strips);

fourth strips that adjoin the third strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the second strips but staggered with those of the first and third strips (Fig. 1 above, note: the 4<sup>th</sup> strips);

fifth strips that adjoin the fourth strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the first and third strips but staggered with those of the second and fourth strips (Fig. 1 above, note: the 5<sup>th</sup> strips);

sixth strips that adjoin the fifth strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width,

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and are configured in such a manner that their dies are aligned with those of the second and fourth strips but staggered with those of the first, third and fifth strips (Fig. 1 above, note: the 6<sup>th</sup> strips).

Aria fails to teach seventh strips that adjoin the sixth strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the first, third and fifth strips but staggered with those of the second, fourth and sixth strips;

eighth strips that adjoin the seventh strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the second, fourth and sixth strips but staggered with those of the first, third, fifth and seventh strips; and

ninth strips that adjoin the eighth strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the first, third, fifth and seventh strips but staggered with those of the second; fourth, sixth and eighth strips

Claim 5 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 6-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons for Allowance***

9. The following is a statement of reasons for the indication of allowable subject matter:

After further search and consideration it is determined that the prior art of record neither anticipated nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach "seventh strips that adjoin the sixth strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the first, third and fifth strips but staggered with those of the second, fourth and sixth strips;

eighth strips that adjoin the seventh strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width, and are configured in such a manner that their dies are aligned with those of the second, fourth and sixth strips but staggered with those of the first, third, fifth and seventh strips; and

ninth strips that adjoin the eighth strips to be symmetric with each other, are arranged in at least one row such that their dies are designed to have an equal width,



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and are configured in such a manner that their dies are aligned with those of the first, third, fifth and seventh strips but staggered with those of the second; fourth, sixth and eighth strips" as recited in claim 3.

Also, the prior art of record neither anticipated nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach "taking away alternately arranged second, fourth, sixth, eighth strips (2,2';4,4';6,6'; and 8,8') from the first sawed wafer and moving the second, fourth, sixth and eighth strips so that their vertical lines(L2) for die design are correctly aligned with those of first, third, fifth, seventh and ninth strips "as recited in claim 5.

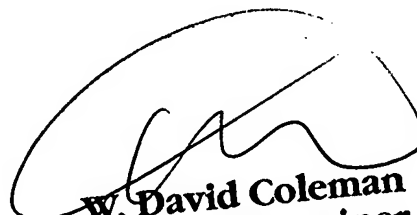
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Su C. Kim whose telephone number is (571) 272-5972. The examiner can normally be reached on Monday - Thursday, 9:00AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Su C. Kim (4/15/2007)



**W. David Coleman**  
**Primary Examiner**